

## E<sub>CTA</sub>M<sub>AGG</sub>113

### CTAF

ALLELE 1: 1 TTAAAGGGATATGTTTTTTTCACTAATG-CtGTAAAAATTCACCC--AgATTTTTTGCATTTTcttttgaaaaaatgt  
|||||  
ALLELE 2: 1 TTAAAGGGATATGTTTTTTTCACTAATGtC-GTAAAAATTCACCCcaaA-ATTTTTTGCATTTT-----  
CTAR

ALLELE 1: 74 tagatatATCATGTTTTTTTACAAGCATTACAATAATATTCACTCGTATATTAGGAATTC 133  
|||||  
ALLELE 2: 61 -----ATCATGTTTTTTTACAAGCATTACAATAATATTCACTCGTATATTAGGAATTC 113

## E<sub>CCG</sub>M<sub>AAC</sub>405

### A2D8F

ALLELE1: 1 TTAAAACTTGGGTGATCGGTATTACAGTACGAGGGCCA-----ATCAACTAAAATA-TctTGCA  
|||||  
ALLELE2: 1 TTAAAACTTGGGTGATCGGTATTACAGTACGAGGGCCAgtggttgagccaATCAACTAAAATAAtT-TGCA  
A2D8R

ALLELE1: 62 AACGATAATAATTAAGAAAAAGAC-aCACITTTGAGGGCATTTTTTGACTTGAGAGAACTCAGGTATCAATCTAA  
|||||  
ALLELE2: 74 AACGATAATAATTAAGAAAAAGACT-CACITTTGAGGGCATTTTTTGACTTGAGAGAACTCAGGTATCAATCTAA  
MICROSATELLITE

ALLELE1: 138 AAGCAACGCTGTTTCACCTTGAGCTGAAACACACCTGGAGGAGAAAGCAAAAGCAAAACCGAGAGAGAAATAAAG  
|||||  
ALLELE2: 150 AAGCAACGCTGTTTCACCTTGAGCTGAAACACACCTGGAGGAGAAAGCAAAAGCAAAACCGAGAGAGAAATAAAG  
MICROSATELLITE

ALLELE1: 214 AACGGAACagagAGAGAGAGAGGAGGACCTTGTTCAAAGCAACGGGGACAACITTTAGAGCCCTGGCGCGCTGGG  
|||||  
ALLELE2: 226 AACGGAAAC---AGAGAGAGAGGAAAGGACCTTGTTCAAAGCAACGGGGACAACITTTAGAGCCCTGGCGCGCTGGG

ALLELE1: 291 GGTCAATAAGCGTAACCTGGCTGAGGAGAGCCTCGGCG-tCGTCCTTGCTGAAGCAGAGAGGAGAG-CaCGAGA  
|||||  
ALLELE2: 299 GGTCAATAAGCGTAACCTGGCTGAGGAGAGCCTCGGCGc-CGTCCCTTGCTGAAGCAGAGAGGAGAGcC-CGAGA

ALLELE1: 365 CCAAGAGAAACTCCTCGGAAGCAACGGGAATTC 397  
|||||  
ALLELE2: 373 CCAAGAGAAACTCCTCGGAAGCAACGGGAATTC 405

FIG. 1a-1

**ECG M<sub>AGA</sub> 116**

**ALLELE 1 : 1**

GAATTCcGGTTATCTCAGACAACTTTTTGTTTGGTTTAGTAAGAAGACAGCATTA  
||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||  
**ALLELE 2 : 1**

GAATTCcGGTTATCTCAGACAACTTTTTGTTTGGTTTAGTAAGAAGACAGCATTA  
||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||

**ALLELE 1: 60** CCAGGCTTTGGAGGCATAGAAATAATTTTTTATATaAAAAAAAAAAGTCCTCTTTAA  
|||||  
**ALLELE 2: 60** CCAGGCTTTGGAGGCATAGAAATAATTTTTTATAT--AAAAAAAAGTCCTCTTTAA

## EATG-MCGA87

Allele 1: 1 GAATTCATGGTTTCTCTTAT-----GACATTGTGGCCAGTAATACTACTATATAAATTCAGATTGGGTTT  
 Allele 2: 1 GAATTCATGGTTTCTCTTATcttatgACATTGTGGCCAGTAATACTACTATATAAATTCAGATTGGGTTT

Allele 1: 68 CTCATAACCGTGGTCGTAA 87  
 |||||  
 Allele 2: 73 CAGATAACCGTGGTCGTAA 92

**ECCC MATG161**

ALLELE1: 1 TTAATGAAAAATCGATCAAAATCAAATAATATATGCTTTTTTTAGTTG-gGTTCAAGT-ACT  
|||||  
ALLELE2: 1 TTAATGAAAAATCGATCAAAATCAAATAATATATGCTTTTTTTAGTTGT-gTTCAAGTAACT

ALLELE1: 61 TTTTATTGAAAAAATCGACCCCAAGTGAAAACACATGTGGAGAATGTTTTGT 116  
|||  
|||  
  
ALLELE2: 62 TTTTATTGAAAAAATCGACCCCAAGTGAAAACACATGTGGAGAATGTTTTGT 117

ALLELE1: 117 GCATCCACGTTTTTCTTGTAACAATCAGCTGTGAGAGGGGAATTC 161  
|||  
ALLELE2: 118 GCATCCACGTTTTTCTTGTAACAATCAGCTGTGAGAGGGGAATTC 162

**ECCA<sub>MAGC</sub>114**

ALLELE1: 1 GAATTCCGAGcC-AGATTGTGATCAACAATGTTGCCA AAAATGTTCAAGCATCTTA 59  
||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||  
ALLELE2: 1 GAATTCCGAG-CtAGATTGTGATCAACAATGTTGCCA AAAATGTTCAAGCATCTTA 59

ALLELE1: 60 GGGAACTGCTATCTTACTTCCTPAAATTTTTTTATTGACATCCAAAGTGTCCTTAA 114  
|||||  
|||  
  
ALLELE2: 60 GGGAACTGCTATCTTACTTCCTPAAATTTTTTTATTGACATCCAAAGTGTCCTTAA 114

**FIG. 1a-2**

# **E<sub>ATG</sub>M<sub>CGA</sub>87 BAC extension and TaqMan probe and primers**

Allele 1:	ttatcatccaaaaattaaaaattgaaaaactttaatacacaatgcacatttttgagccattcatgtc 
Allele 2:	ttatcatccaaaaattaaaaattgaaaaactttaatacacaatgcacatttttgagccattcatgtc 
Allele 1:	atctcttggtctgagtccttatcatctctgtggattgaattcattggtttctcttat- 
Allele 2:	atctcttggtctgagtccttatcatctctgtggattgaattcattggtttctcttatGACATTGTT 
Allele 1:	GCCAAGTAATACTACTATATAAAATTCAGATTGGGTTCTGATAACCGTGGTCGTTAAatactataataacc 
Allele 2:	GCCAAGTAATACTACTATATAAAATTCAGATTGGGTTTCAGATAAACCGTGGTCGTTAAatactataataacc 

**FIG. 1b**

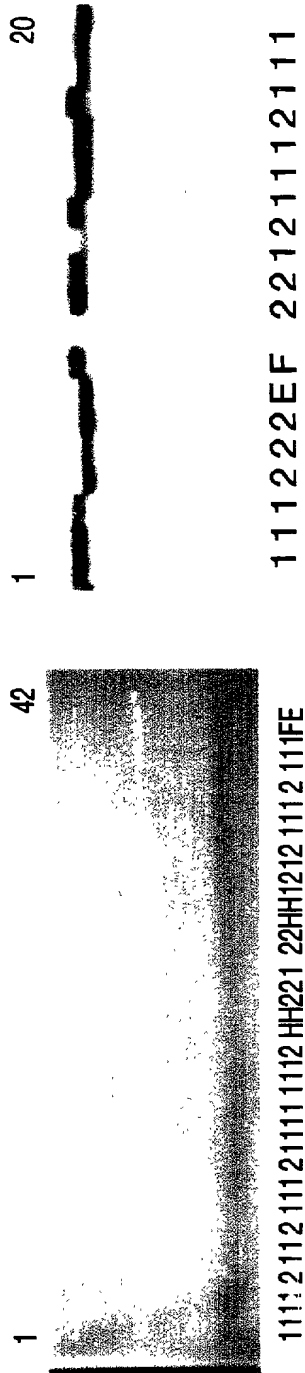


FIG. 2B



FIG. 2A

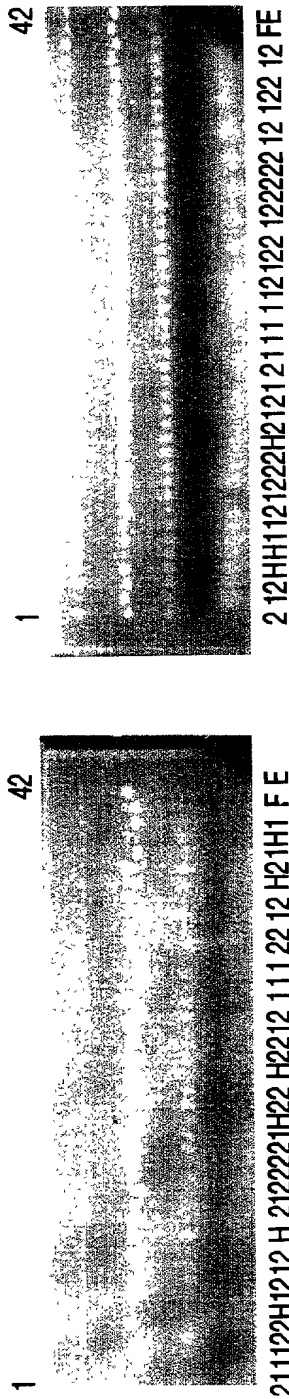
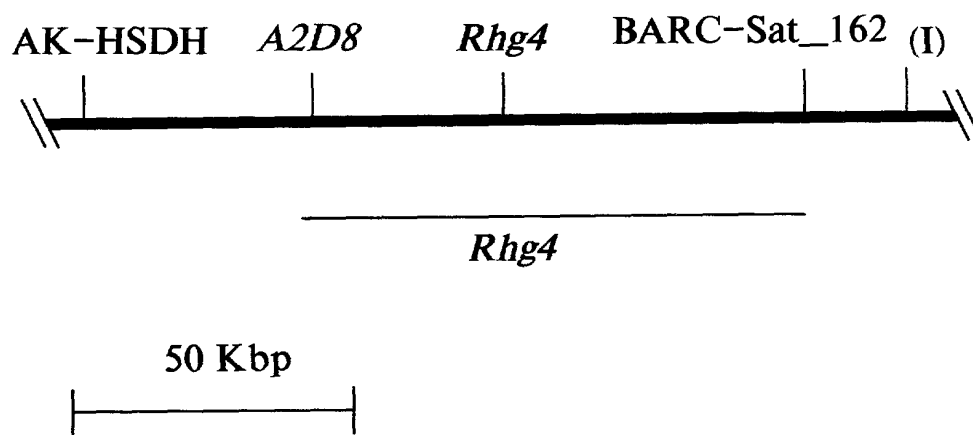


FIG. 2C

FIG. 2D



**FIG. 3**

Title. Isolated Polynucleotides and Polypeptides Relating to Loci Underlying Resistance to Soybean Cyst Nematode and Soybean Sudden Death Syndrome and Methods Employing Same  
Applicant(s): Lightfoot et al.  
Serial No.: 09/772,134

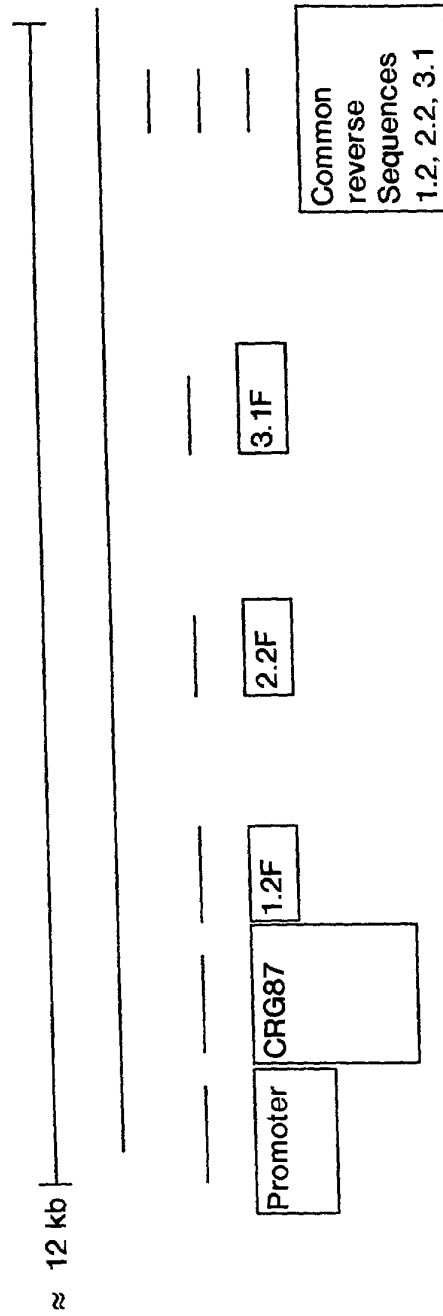


FIG. 4

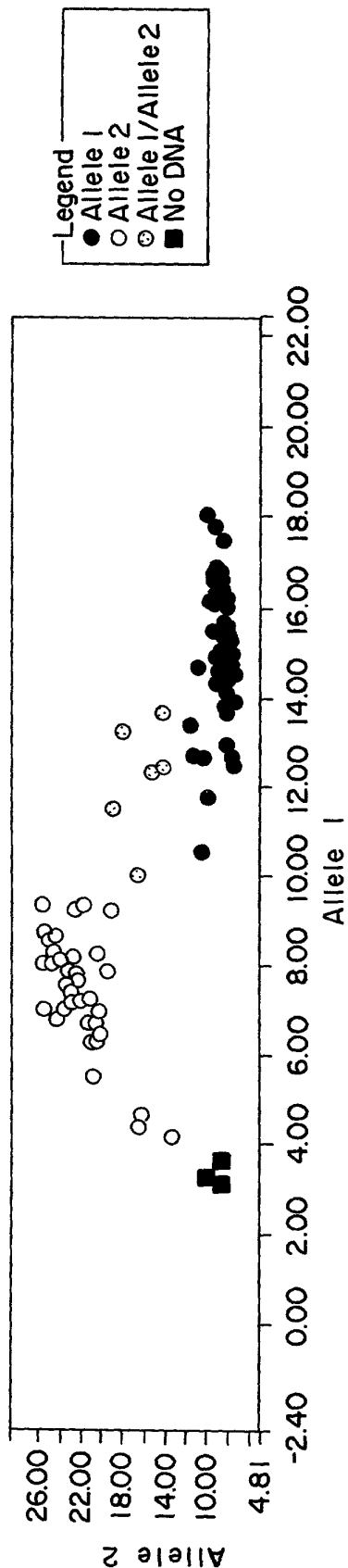


FIG. 5A

	1	2	3	4	5	6	7	8	9	10	11	12
A	2	1	1 and 2	1	1	1	1	1	1	2	1	2
B	1	2	2	1	1 and 2	2	2	1	2	1 and 2	1	2
C	1	2	1	1	1	2	2	1	1	1	1	2
D	1	1	2	1	2	2	2	1 and 2	2	1	1	2
E	1 and 2	1	2	2	2	No Amp	2	1	1	1	1	2
F	1 and 2	1	1	2	1	1	2	2	2	2	1	2
G	1	1	1	2	1	2	2	1	1	1	1	2
H	2	2	2	1	1	1	2	1	1	1	No Amp	No Amp

FIG. 5B

Title Isolated Polynucleotides and Polypeptides Relating to Loci  
Underlying Resistance to Soybean Cyst Nematode and Soybean  
Sudden Death Syndrome and Methods Employing Same  
Applicant(s): Lightfoot et al.  
Serial No.: 09/772,134

FIG. 6A

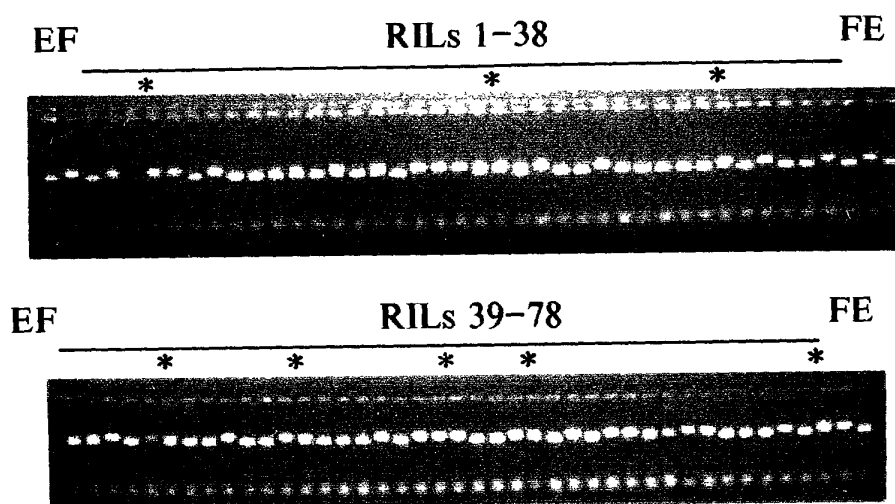


FIG. 6B



Synthetic rhg1 gene

1

AATGGGAGGAGTGGGAAAGACAGTGGCTATGGAGCTTGTTCCGGAGGTTGGGTTGGAAT  
CAAGTGTGCTCAGGGACAGGTTATTGTGATCCAGCTTCCTTGGAAGGGTTTGAGGGGTC  
GAATCACCGACAAAATTGGCCAACTTCAAGGCCTCAGGAAGCTTAGTCTTCATGATAAC  
CAAATTGGTGGTTCAATCCCTTCAACTTTGGGACTTCTTCCCAACCTTAGAGGGGTTCA  
GTTATTCAACAATAGGCTTACAGGTTCCATACCTCTTTCTTTAGGTTTCTGCCTTTGCT  
TCAAGTCTCTTGACCTCAGCAACAACCTTGCTCACAGGAGCAATCCCTTATAGTCTTGCT  
AATTCCACTAAGCTTTATTGGCTTAACCTTGAGTTTCAACTCCTTCTCTGGTCCTTTACC  
AGCTAGCCTAACTCACTCATTTTCTCTCACTTTTCTTTCTCTTCAAATAACAATCTTT  
CTGGCTCCCTTCCTAACTCTTGGGGTGGGAATTCCAAGAATGGCTTCTTTAGGCTTCAA  
AATTTGATCCTAGATCATAACTTTTTCTACTGGTGACGTTCCCTGCTTCTTTGGGTAGCTT  
AAGAGAGCTCAATGAGATTTCCCTTAGTCATAATAAGTTTAGTGAGCTATAACCAAATG  
AAATAGGAACCCTTTCTAGGCTTAAGACACTTGACATTTCTAATAATGCCTTGAATGGG  
AAGTGCCTGCTACCTCTCTAATTTATCCTCACTTACACTGCTGAATGCAGAGAACAA  
CCTCCTTGACAATCAAATCCCTCAAAGTTTAGGTAGATTGCGTAATCTTTCTGTTCTGA  
TTTTGAGTAGAAACCAATTTAGTGGACATATTCCTTCAAGCATTGCAAACATTTCTCG  
CTTAGGCAGCTTGATTTGTCACTGAATAATTTCAAGTGGAGAAATTCAGTCTCCTTTGA  
CAGTCAGCGCAGTCTAAATCTCTTCAATGTTTCTTACAATAGCCTCTCAGGTTCTGTCC  
CCCCTCTGCTTGCCAAGAAATTTAACTCAAGCTCATTTGTGGGAAATATTCAACTATGT  
GGGTACAGCCCTTCAACCCCATGTCTTTCCCAAGCTCCATCACAAGGAGTCATTGCCCC  
ACCTCCTGAAGTGTCAAACATCACCATCATAGGAAGCTAAGCACCAAAGACATAATTC  
TCATAGTAGCAGGAGTTCTCCTCGTAGTCCTGATTATACTTTGTTGTGTCTGCTTTTC  
TGCCTGATCAGAAAGAGATCAACATCTAGGCCGGGAACGGCCAAGCCACCCGAGGGTAG  
AGCGGCCACTATGAGGACAGAAAAAGGAGTCCCTCCAGTTGCTGGTGGTGATGTTGAAG  
CAGGTGGGGAGGCTGGAGGGAACTAGTCCATTTTGATGGACCAATGGCTTTTACAGCT  
GATGATCTCTTGTGTGCAACAGCTGAGATCATGGGAAAGAGCACCTATGGAACGTGTTA  
TAAGGCTATTTTGGAGGATGGAAGTCAAGTTGCAGTAAAGAGATTGAGGGAAAAGATCA  
CTAAAGGTCATAGAGAATTTGAATCAGAAGTCAGTGTTCTAGGAAAAATTAGACACCCC  
AATGTTTTGGCTCTGAGGGCCTATTACTTGGGACCCAAAGGGGAAAAGCTTCTGGGTTT  
TGATACATGTCTAAAGGAAGTCTTGCTTCTTTCCTACATGGAAGGTTTCGTGTGCTGGTT  
CTTTCATTAAAGTGTGTTGTGTGCTGGTCTTTAATTATAATTTGGAGTTTACCTTAGT  
AATCTGTATAATTCTAATCGGAGAACAGTACAAACAAAAACACCTAAGGAACAACACCT  
TANCTTTAATATACCATATCAATAAAGTGAAATATTTTCTTGGTCATCTTGATGCAGGG  
GGAACCTGAACATTCATTATTGGCCACAAGATTAAATAGCCCAAGCCTTGGCCCCGGGCT  
TGTTTGCCCTTCATTCCCAGGAGAACATCATACATGGGACCTCNCATCCAGCAATGTGTG  
GCTTGATGAAAAACAAATGCTAAAATTGAGATTTTGGTCTTTTTCGGGTTGATGTCAAC  
TGCTGCTAATTCCAACGTGATAGCTACAGCTGGAGCATTTGGATACCGGGCACCTGAGCT  
CTCAAAGCTCAAGAAAGCAAACACTAAAACCTGATATCTACAGTCTTGGTGTTATCTTGT  
TAGAACTCCTAACGAGGAAATCACCTGGGGTGTCTATGAATGGACTAGATTGCTCAG  
TGGGTTGCCTCAGTTGTCAAAGAGGAGTGGACAAATGAGGTTTTTGTGATGCAGACTTGAT  
GAGAGATGCATCCACAGTTGGCGACGAGTTGCTAAACACGTTGAAGCTCGCTTTGCACT  
GTGTTGATCCTTCTCCATCAGCACGACCAGAAGTTCATCAAGTTCTCCAGCAGCTGAAG  
AGATTAGACCAGAGAGATCAGTCACAGCCAGTCCCGGGGACGATATCGTATAGCACAAA  
TTTTGCATTGATTTTTTTTGTGCCAAATGTAGTAGGCCTACTATATATATGTTCTATGAT

FIG. 7A

Title: Isolated Polynucleotides and Polypeptides Relating to Loci  
Underlying Resistance to Soybean Cyst Nematode and Soybean  
Sudden Death Syndrome and Methods Employing Same  
Applicant(s): Lightfoot et al.  
Serial No.: 09/772,134

TCTTTCATTCTTATATTATTTTTGCCTGTTTGAATGCTTGAATTTGTACATACTCATAC  
TACAATAAGGTGTAGTTCTGGTTAATTTTACCTCTACCTCAAAGCTGGGGTGTAATTCT  
GTTTCCTCCAAGGCACATAATAGTTGAAAATAGTTCTCAGGAGCATTCAATTGTTTATTC  
TGCAAGATTCTCTTTCACGGCTGCTATCTTCTATGCATGCCCTGCCCATAAATGCATTA  
TGAAGAATTGTAACGGCTGTGTTTTTGGACTTCTTCAAAAAGTTTATGTTATTGCCAGG  
TGTATATATCAACATGTTTTTAAAGATTTTCAAACAATCAGGTTTTTAGATGTGGGTTTGC  
ATGCATGAGATTGGACTAGTGCGCTTGATGTAGTATAAAATATAAAATTGTCCAATCAAG  
CACCTCTACATGTCCAATAATGGGCCTTATGAACTTAATTTTTTAATTACAACTA  
CAGTAATCTTTTTGAATAAAGATTTACAAATTACAACNGACATGTGAAGCNGCATCTTT  
NATTGNCAATCTTTCAAGTTACTCTATTATTTTCTGCN

3105bp

**FIG. 7B**

Rhg1 Peptide

NGRSGKDSGYGACSGGWVGIKCAQGQVIVIQLPWKGLRGRIT  
DKIGQLQGLRKLSLHDNQIGGSIPSTLGLLPNLRGVQLFNNRLG  
SIP

LSLGFCPLLQSLDLSNNLLTGAIP  
YSLANSTKLYWLNLSFNSFSGPLP  
ASLTHSFSLTFLSLQNNNLSGSLPNSWGG  
NSKNGFFRLQNLILDHNFFTGDVP  
ASLGSLRELNEISLSHNKFSGAIP  
NEIGTLSRLKTLDISNNALNGNLP  
ATLSNLSSLTLLNAENNLLDNQIP  
QSLGRLRNLSVLILSRNQFSGHIP  
SSIANISSLRQLDLSLNNFSGEIP  
VSFDSQSRSLNLSNVSYNSLSGSVP

PLLAKKFNSSSFVGNIQLCGYSP

STPCLSQ

APSQGVIAAPPPEVSKHHHR

KLSTKDIILIVAGVLLVLIILCCVLLFCLIRKRS

TSKAGNGQATEGRAATMRTEKGVPPVAGGDVEAGGEAGGKLVHF

DGPMAFTADDLLCATAEIMGKSTYGTVYKAILEDGSQVAVKRLR

EKITKGHREFESEVSVLGKIRHPNGLALRAYYLGPKEKLLVFD

YMSKGGLLLFYMEGSCAGSFIKVLCLVLFNLYNLEFYLSNLYNSN

RRTVQTKTPKEQHLXFNIPIYQ

-SEIFSWSS-CRGN-TFIIGHKMKIXQDLAVACSPSPFETSMD

LXSSNVCX-NXMLKLQFWSFSVDVNCC-FQRDSYSWSIGIPGT-

ALKAQESKH-N-YLQSWCYLVRTPNEEITWGVYEWTRFASVGCL

SCQRGVDK-GF-CRLDERCIHSWRRVAKHVEARFALC-SFSIS

TTRSSSSSPAAGRD-TREISHSQSHLPGRPLEPYSESY

FIG. 7C

Sequences producing significant alignments:		Score (bits)	E Value
pir:T46070	hypothetical protein T18N14.120 - Arabidopsis thaliana	632	e-180
pir:T47727	hypothetical protein F18O21.60 - Arabidopsis thaliana	344	1e-95
pir:T04587	hypothetical protein F23E13.70 - Arabidopsis thaliana	268	9e-71
pir:T49038	hypothetical protein T5P19.20 - Arabidopsis thaliana	257	2e-67
pir:T48210	hypothetical protein T20L15.160 - Arabidopsis thaliana	241	1e-62
pir:T05050	protein kinase homolog M3E9.30 - Arabidopsis thaliana	238	2e-61
pir:T18536	receptor-like protein kinase - Ipomoea nil (Japanese...	236	3e-61
pir:T48489	receptor-like protein kinase - Arabidopsis thaliana	236	5e-61
pir:T10515	disease resistance protein Cf-2.2 - currant tomato	235	6e-61
pir:T10504	disease resistance protein Cf-2.1 - currant tomato	235	6e-61
pir:T30553	disease resistance protein Hcr2-5D - tomato	229	4e-59
pir:S27756	receptor-like protein kinase 5 (EC 2.7.1.-) precursor...	227	1e-58
pir:T48499	receptor-like protein kinase-like protein - Arabidop...	226	3e-58
pir:T46033	receptor protein kinase-like protein - Arabidopsis t...	226	4e-58
pir:T05335	hypothetical protein F1C12.190 - Arabidopsis thaliana	221	1e-56
pir:T10636	hypothetical protein T13K14.100 - Arabidopsis thaliana	219	7e-56
pir:T05898	hypothetical protein F6H11.170 - Arabidopsis thaliana	218	1e-55
pir:T45717	receptor-kinase like protein - Arabidopsis thaliana	212	7e-54
pir:T05322	hypothetical protein F18F4.240 - Arabidopsis thaliana	211	1e-53
pir:T10659	probable serine/threonine-specific protein kinase (E...	211	2e-53
pir:T03784	probable receptor protein kinase - rice	208	1e-52
pir:T50851	receptor protein kinase homolog [imported] - soybean	201	1e-50
pir:T45647	receptor protein kinase-like protein - Arabidopsis t...	199	5e-50
pir:T45718	receptor-kinase like protein - Arabidopsis thaliana	199	7e-50
pir:T50850	receptor protein kinase homolog [imported] - soybean	199	7e-50
pir:T45645	receptor kinase-like protein - Arabidopsis thaliana	196	3e-49
pir:T09356	brassinosteroid-insensitive protein BRI1 - Arabidops...	196	3e-49
pir:T00712	protein kinase homolog F22O13.7 - Arabidopsis thaliana	190	2e-47
pir:A57676	protein kinase Xa21 (EC 2.7.1.-), receptor type prec...	190	3e-47
pir:S39476	kinase-like transmembrane protein TMKL1 precursor - ...	188	1e-46
pir:T02154	protein kinase homolog T1F15.2 - Arabidopsis thaliana	188	1e-46
pir:T10725	protein kinase Xa21 (EC 2.7.1.-) A1, receptor type -...	186	5e-46
pir:T05897	protein kinase homolog F6H11.160 - Arabidopsis thaliana	184	1e-45
pir:T04313	protein kinase Xa21 (EC 2.7.1.-), receptor type - rice	183	3e-45
pir:T10727	protein kinase Xa21 (EC 2.7.1.-) D, receptor type - ...	181	2e-44

FIG. 7D

>pir:T46070 hypothetical protein T18N14.120 - Arabidopsis thaliana  
Length = 836

Score = 632 bits (1613), Expect = e-180  
Identities = 329/550 (59%), Positives = 400/550 (71%), Gaps = 2/550 (0%)  
Frame = +1

Query: 7 RSGKDSGYGACSGGWVGIIKCAQGVIVIQLPWKGLRGRITDKIGQLQGLRKLSLHDNQIG 186  
+S +S GW GIKC +GQV+ IQLPWKGL G I++KIGQL LRKLSLH+N I  
Sbjct: 72 KSWNNSASSQVCSGWAGIKCLRGQVVAIQLPWKGLGGTISEKIGQLGSLRKLSLHNNVIA 131

Query: 187 GSIPSTLGLLPNLRGVQLFNNRLTGSIPSLGFLCLCFKSLDLSNNLLTGAIPYSLANSTK 366  
GS+P +LG L +LRGV LFNRL+GSIP+SLG C ++LDLS+N LTGAIP SL ST+  
Sbjct: 132 GSVPRSLGYLKSRLRGVYLFNNRLSGSIPVSLGNCPLLQNLDLSSNQLTGAIPPSLTESTR 191

Query: 367 LYWLNLFSNFSFGPLPASLTHSFLTFLSLQNNNLSGSLPNSWGGNSKNGFFRLQNLILD 546  
LY LNLFSNS SGPLP S+ S++LTFL LQ+NNLSGS+P+ + NG L+ L LD  
Sbjct: 192 LYRLNLFSNLSLGSPLPVSVARSYTLTFLDLQHNNLSGSIPDFF----VNGSHPLKTLNLD 247

Query: 547 HNFFTGDVPASLGSLRELNEISLSHNKFSGAIPNEIGTSLRLKTLDISNNALNGNLPATL 726  
HN F+G VP SL L E+S+SHN+ SG+IP E G L L++LD S N++NG +P +  
Sbjct: 248 HNRFSGAVPVSLCKHSLLEEVSIHNLQSGSIPRECGGLPHLQSLDFSYSINGTIPDSF 307

Query: 727 SNLSSLTLLNAENLLDNQIPQSLGRLRNLSVLILSRNQFSGHIPSSIANISSLRQLDLS 906  
SNLSSL LN E+N L IP ++ RL NL+ L L RN+ +G IP +I NIS +++LDLS  
Sbjct: 308 SNLSSLVSLNLESNHLKGPIPDALDRHLNLTENLKRKNKINGPIPETIGNISGIKKLDLS 367

Query: 907 LNNFSGEIPVSFDSQRSNLNLFNVSYNLSGSVPPLLAKKFNSSFVGNQLCGYSPSTPC 1086  
NNF+G IP+S L+ FNVSYN+LSG VPP+L+KKFNSSSF+GNIQLCGYS S PC  
Sbjct: 368 ENNFTGPIPLSLVHLAKLSSFNVSYNLTLGPPVPLSKKFNSSFGLGNIQLCGYSSNPC 427

Query: 1087 LSQAPSQGVAPP--PEVSKHHHRKLSKDIILIVAGVLLVVLIIILCCVLLFCLIRKRS 1260  
+ + P + + HHRKLS KD+ILI G LL +L++LCC+LL CLI+KR+  
Sbjct: 428 PAPDHHHPLTSLPTSSQEPRKHHHRKLSVKDVLIAIGALLAILLLCCILLCCLIKRA 487

Query: 1261 TSRPGTAKPPEGRAATMRTEKGVPPVAGGDVEAGGEAGGKLVHFDGPMAFTADDLLCATA 1440  
K +G+ T +EK V G AGGE GGKLVHFDGP FTADDLLCATA  
Sbjct: 488 -----ALKQKDGKDKT--SEKTVSAGVAGTASAGGEMGGKLVHFDGPPVFTADDLLCATA 540

Query: 1441 EIMGKSTYGTVYKAILEDGSQVAVKRLREKITKGHREFESEVSVLGKIRHPNVLALRAYY 1620  
EIMGKSTYGT YKA LEDG++VAVKRLREK TKG +EFE EV+ LGKIRH N+LALRAYY  
Sbjct: 541 EIMGKSTYGTAYKATLEDGNEVAVKRLREKTTKGVEFEFEVLTALGKIRHQNLALRAYY 600

Query: 1621 LGPKGEKLLGFD 1656  
LGPKGEKLL FD  
Sbjct: 601 LGPKGEKLLVFD 612

FIG. 7E

Score = 185 bits (464), Expect = 1e-45  
Identities = 93/161 (57%), Positives = 122/161 (75%), Gaps = 3/161 (1%)  
Frame = +2

Query: 1943 GLVCLHSQENIIHGTSHPAMCGLMKNKC\*NS---DFGLFRVDVNCC\*FQRDSYSWSIGYR 2113  
GL LHS EN+IH + ++ ++ N+ D+GL R+ + + ++GYR  
Sbjct: 647 GLAHLHSNENMIH--ENLTASNILLDEQTNADYGLSRLMTAAAATNVIATAGTLGYR 704

Query: 2114 APELSKCLKKANTKTDIYSLGVILLELLTRKSPGVSMNGLDLPQWVASVVKEEWTNEVFDA 2293  
APE SK+K A+ KTD+YSLG+I+LELLT KSPG NG+DLPQWVAS+VKEEWTNEVFD  
Sbjct: 705 APEFSKIKNASAKTDVYSLGIIILELLTGKSPGEPTNGMDLPQWVASIVKEEWTNEVFDL 764

Query: 2294 DLMRDASTVGDELLNTLKLALHCVDPSPSARPEVHQVLQQLKRL 2425  
+LMR+ +VGDELLNTLKLALHCVDPS+ARPE +QV++QL+ +  
Sbjct: 765 ELMRETQSVGDELLNTLKLALHCVDPSPAARPEANQVVEQLEEI 808

FIG. 7F